

Notice of Allowability

Application No.

09/604,196

Examiner

D. I. Lee

Applicant(s)

MULLA ET AL.

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/09/04 (PTO-413).
2. ☒ The allowed claim(s) is/are 53-57,60 and 61.
3. ☒ The drawings filed on 27 June 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 041109.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

D. I. Lee
Primary Examiner
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Examiner's Amendment

1. Receipt is acknowledged of the Amendment filed 02 July 2004. Claims 1-52 have been canceled and claims 53-65 have been newly added. Currently, claims 53-65 are pending in this application.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Israel on 09 November 2004 (see PTO-413).

The application has been amended as follows:

IN THE CLAIMS

3. Re claims 53-65: Claims 53-65 have been substitute with the followings:

53. (Amended Once) A portable instrument for projecting bit-mapped two-dimensional images in display modes of operation, and for selectively electro-optically reading indicia in reading modes of operation, comprising:

a) a housing;

b) an electro-optical assembly supported by the housing, for reading an indicium during a reading mode, and for projecting a bit-mapped two-dimensional image related to the indicium on a viewing surface during a display mode, the images being different for different indicia, and

c) a mode selector for selecting one of the modes[.];

wherein the assembly includes a light source for generating a light beam, and a scanner for sweeping the light beam in a raster pattern of scanning lines that cover an area of the viewing surface, and wherein the assembly includes a controller for pulsing the light source on and off while the light beam is swept over each of the scanning lines; and

wherein the scanner includes a first scan mirror for sweeping the light beam along a first direction, and a second scan mirror for sweeping the light beam along a second direction generally orthogonal to the first direction.

54. (Original) The instrument of claim 53, wherein the housing has a size and a shape configured to be held in a user's hand during both the display and reading modes.

55. (Original) The instrument of claim 53, wherein the assembly includes a reader having a light source for generating a light beam, a light sensor having a field of view and operative for detecting light from the indicia, and a scanner for scanning at least one of the light beam and the field of view.

56. (Original) The instrument of claim 55, wherein the indicia are coded, machine-readable symbols over which said at least one of the light beam and the field of view is scanned, and wherein the sensor is operative for generating an electrical signal corresponding to each symbol, and wherein the reader includes a signal processor for processing the signal to data indicative of each symbol.

57. (Original) The instrument of claim 53, wherein the assembly includes a reader having a capture device having a field of view over which the indicia are captured.

58. (Canceled)

59. (Canceled)

60 (Original) The instrument of claim 53, wherein the mode selector is a switch on the housing, and manually actuatable between reading and display states that respectively correspond to the reading and display modes.

61. (Amended Once) A method of projecting bit-mapped two-dimensional images in display modes of operation, and of selectively electro-optically reading indicia in reading modes of operation, comprising the steps of:

a) manually selecting a reading mode on a portable instrument for reading an indicium; and

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b) manually selecting a display mode on the portable instrument for projecting a bit-mapped two-dimensional image related to the indicium on a viewing surface, the images being different for different indicia[.];

wherein the reading mode includes generating a light beam by a light source, sweeping the light beam in a raster pattern of scanning lines that cover an area of the viewing surface by a scanner, and pulsing the light source on and off while the light beam is swept over each of the scanning lines;

wherein the sweeping the light beam in a raster pattern of scanning lines includes sweeping the light beam along a first direction by a first scan mirror and sweeping the light beam along a second direction generally orthogonal to the first direction by a second scan mirror.

62. (Canceled)

63. (Canceled)

64. (Canceled)

65. (Canceled)

Allowable Subject Matter

4. Claims 53-57 and 60-61 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Chen discloses a portable, handheld projecting system having a display surface and a stationary projector for projecting an image on the display surface in a display mode of operation. The display surface is small screen (e.g., 5"x7") and that the display system is incorporated into miniature portable electronic device such as a personal digital assistances, cellular phones, pagers, or the like.

Kahn discloses a portable instrument for projecting a light beam in an aiming mode of operation, and for selectively electro-optically reading indicia in a reading mode of operation. The instrument

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having a housing that includes a window, an electro-optical assembly supported by the housing for reading the indicia during the reading mode and for projecting the aiming light beam on a viewing surface during the aiming mode, and a triggering switch as a mode selector for selecting one of aiming or reading operation.

IEEE discloses a chip sized raster-scanning display system based on pairs of orthogonally projecting the two-dimensional bit-mapped image (the two-dimensional pixel image) on a viewing surface via two scanning mirrors during the display mode. The display system includes an energizable laser for projecting a laser beam toward the target and provides a raster pattern of scanning lines that covers an area of the viewing surface. The scanner includes a first scan mirror (a fast circular mirror) for horizontal scanning (sweeping the laser beam along a first direction over the target) and a second scan mirror (a slow circular mirror) for vertical scanning (sweeping the laser beam along a second direction orthogonal to the first direction over the target). The mirrors are nearly circular so that each mirror provides angular distances wherein the first angular distance is greater than the second angular distance (3 cm horizontal by 2.8 cm vertical raster scan is presented). The IEEE states that the mechanical instability of the first mirror causes overlap scan lines and distorting the image. To overcome the mechanical inaccuracy, the scan pattern is controlled by selectively switching the light source on and off which obviously teaches that the raster-scanning display system includes a controlling means operatively connected to, and operative for selectively energizing the laser to generate and illuminate individual light pixels at the selected position and de-energizing the laser at other selected positions, and at a refresh rate at which pixel persist to enable the eye to steadily view the image comprises of a light pattern of the pixels on the target.

Plesko discloses a stylus beam scanning device for utilizing as a bar code scanning device. The indicia reader/scanner housing having a size and shape configured to be held in a user's hand during reading mode. Plesko shows the scanner having a light source (i.e., a laser for generating and directing the

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light beam as a visible laser beam along an optical path), and a manually actuatable trigger. When scanning the indicia, the light transmissive element of the housing faces the indicia and the light directed by the laser light source passes in one direction through the element and the reflected light passes in an opposite direction through the element to be detected by the light sensor having a field of view, and for generating an electrical signal indicative of the detected light. The housing is elongated and extending along an axis between opposed end regions, the window is located at one of the end regions the light is projected through the window. The reader further includes a detector for detecting the light reflected off the coded indicia and generating an electrical signal indicative of the detected light intensity. Plesko further discloses the reader having a processor for decoding the electrical signal into data represented by the coded indicia, a memory for storing the data within the housing, a scanning module as a drive supported by the housing for scanning the emitted laser light beam across the target. The scan module drive for moving the laser light beam along a path outwardly of the housing towards the target and producing a beam pattern (e.g., a spot, a line, or an elliptical scan pattern) on the target when in a pointing mode in which a visual display is created on the target.

One of ordinary skill in the art would not have been motivated to modify the teachings of Chen, Kahn, IEEE, and Plesko, alone or in combination with other references, in order to obtain the specific portable instrument for projecting bit-mapped two-dimensional image related to the indicium selectively captured by the scanner having a first scan mirror sweeping the light beam along a first direction, and a second scan mirror sweeping the light beam along a second direction generally orthogonal to the first direction, as set forth in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. I. Lee whose telephone number is (571) 272-2399. The examiner can normally be reached on Monday through Thursday from 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D. I. Lee
Primary Examiner
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D. L.